

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
JOHN D. BARNARD, et al.) : Examiner: K. Tang
Application No.: 09/892,525) : Group Art Unit: 2151
Filed: June 28, 2001) :
For: PRINT QUEUE MANAGER) : June 10, 2008

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.132
OF ERIC RIGGERT

Sir:

ERIC RIGGERT declares and says that:

1. My name is Eric Riggert, and I believe that my credentials (UCLA BSEE '92, summa cum laude, and UCLA MSEE '94) qualify me to provide this declaration. I have worked in the communications and computer industries continuously since 1993, supporting and designing embedded communications systems, as well as developing software for use in enterprise printing environments. In addition, I have served as not only a project member, but as a project chief (leader), Program Manager, and Product Planning Manager. I am an unbiased and disinterested party, and will not benefit directly from this action, regardless of the outcome of any ensuing examination.

2. I have reviewed patent application 09/892,525, including the Request for Continuing Examination, preliminary amendment and pending claims as filed at the USPTO on 10/16/2007, the rejections as entered in the outstanding Office communication dated 12/11/2007, as well as the related/cited art.

3. The Office communication equates mechanical limits on the number of print queues with the claimed limits that are dictated by and entered by a system administrator, and then draws inferences from the asserted correspondence. I believe that the asserted correspondence is incorrect and that the inferences drawn from the asserted correspondence are also incorrect, and further I believe that those of ordinary skill would recognize that these are incorrect, as explained below.

4. In Office communication dated 12/11/2007, Examiner's Response to Arguments, the USPTO maintains that a person of ordinary skill in the art could "combine White, Richter, and the AAPA to indicate that the system administrator has to designate the maximum number of printing device[s] [to] be supported in the system." I think that a person of ordinary skill would not reach this conclusion.

5. In my estimation a person of ordinary skill in the art would be a college graduate with a background in computer science, and three to five years of experience in the industry, and would be able to program in several programming and/or scripting languages, as well as configure and use network server equipment. Or, if not a college graduate, a person of ordinary skill would have 10 or more years of on the job experience. In either case, such a person would possess both intelligence and common sense, and be able to draw reasonable inferences from written or described art.

6. White (EP 952-513, specifically paragraphs 0013-0015) describes a communication network consisting of a client processor, print server, and DHCP server, the latter two of which may be combined on a single device. White does not disclose therein any functional characteristics regarding the DHCP server, other than that it "holds TCP/IP configuration parameters available for printer and/or other devices to be configured on [the] network," in paragraph 0015. Thus, a person of ordinary skill would disagree with the conclusions drawn by the examiner, and believe that it is a mischaracterization to claim that White suggests "the system must have maximum number of devices in the system (DHCP server only contains limited IP addresses available for Printers, if not, the DHCP server would not issue any IP address for available printers." White says no such thing directly or indirectly.

7. In fact, White is mute on the topic of maximum number of devices, simply because, from a practical standpoint, there is no maximum, related to IP address assignment. A person who is possessed of ordinary skill in the art recognizes that there is no dearth of IP address availability in a typical network due to common and widespread adoption of Network Address Translation (NAT), whereby multiple computers in a local area network (LAN) share a single public IP address. Prior to NAT, each networked device was expected to use a globally unique IP address. In a standard IPv4 TCP/IP address, consisting of four numeric fields, each holding a single 8-bit byte, or octet, with a value from 0 to 255, the number of IP addresses was globally limited to 256^4 , or 4,294,967,296.

8. With NAT in common use, each LAN needs only one such public IP address, with requests to and from computers within the LAN brokered by a router which translates an arbitrary number of internal IPv4 address (up to 4 billion, theoretically).

Therefore, from the point of view of a person of ordinary skill in the art, there would be no upper bound on the number of available IP addresses.

9. IPv6 addressing, which could also be used, further marginalizes any potential concern regarding the number of available IP addresses. IPv6 is designed to eliminate the need for NAT, since it supports 2^{128} unique addresses. Even with a world population in excess of 6.5 billion, IPv6 still allows for 5.2×10^{28} addresses for each person alive today. Thus, regardless of the IP address standard under consideration, a person of ordinary skill in the art would not draw the assumption that the mere presence of a DHCP server would necessarily imply a maximum number of IP address, or that a DHCP server would ever "run out" of a limited pool of addresses. White is simply silent on this issue because it is of no concern.

10. Additionally, DHCP servers are unaware of the type of networked device to which they are assigning an IP address. There is no requirement or mechanism in the DHCP specification (currently RFC 2131, March 1997) for the network device to identify itself as a printing device to the DHCP server. Therefore, the concept of the DHCP server containing only "limited IP addresses available for Printers," and the related concept of the DHCP server refusing to assign an address to a printer, based on having no more "printer IP addresses," is invalid. A person of ordinary skill in the art would not come to this conclusion regarding specific printer IP addresses, and would instead consider the concept of network IP addresses, and printers, or any specific device type, to simply be "different," because the DHCP server has no concept of a printer - it is just another device, connected to the network. In conclusion, a person of ordinary technical skill in the art would not agree that the number of IP addresses available for printers is limited due to the

presence of a DHCP server. Instead, he/she would regard the number of addresses available for any network connected device on any network to be unbounded, as described above.

11. In White, the function of the DHCP server is merely to assign a valid network TCP/IP address to a newly connected printer (see 0017), so that this printer can use the Service Location Protocol, described in 0018. The use of the Service Location Protocol (RFC 2608), requires that each announced service have a network address, or URL, which is to be used to access the service. RFC 2609 (Service Templates and Schemes) defines the format of this URL, which includes the keyword "service:" followed by other information, including a path to the service. The URL should include, among other items, a host name and/or number (IP address and/or associated hostname, if the network also employs the use of a name server). So, to a person of ordinary skill in the art, the presence of a DHCP server in White is required merely for the use of the SLP protocol. It is the use of this latter protocol which is the true and unique basis for White's invention. The SLP protocol communicates the presence of a printer, which causes a print server to install a driver, register it with the spooler, and create a print queue, in 0022; together forming White's "network plug and play" concept. To a person of ordinary skill in the art, this process is completely different than the one specified in Application 09/892,525, and additionally White's mechanism offers no opportunity or requirement for a system administrator to designate a maximum number of printing devices to be supported using a print queue management interface of any kind.

12. The USPTO response additionally maintains that the "AAPA teaches wherein the system administrator designates number of printing devices to be supported

using a print queue management user interface (entering policy rules that govern how print queues are created and published), refer to 0006-0009, network administrators also have to install/designate new printing devices, refer to 0006)." By this statement, it appears that the rejection has been based on the application itself having recounted the claims in the background materials attached, which is simply untrue.

13. It would be clear to a person of ordinary skill in the art that the purpose and content of the referenced paragraphs is to describe the tedious nature of the conventional manual administration process for printing devices, and that these passages do not disclose the administrator specifying a maximum number of printing devices to be supported using a print queue management user interface. AAPA states (in 0006): "Network administrators must not only install new printing devices on the network, they must also create and manage the print queues associated with printing devices and facilitate network users connecting to and utilizing the printing devices." Additionally, in (0007), "a network administrator generally must manually enter information such as the address assigned to the printing device, the particular type of printing device, and the configuration or capabilities of the printing device. As the number of printing devices increases, the time and effort required to obtain the needed information and create and configure the necessary print queues can become excessively burdensome." From this, it would be clear to a person of ordinary skill in the art that the administrator must perform the laborious steps of manually installing each printing device, manually creating print queues associated with each device, and manually managing any print queue or device configuration.

14. This description of the art is entirely consistent with my experience, and should be familiar to anyone of ordinary skill and knowledge in the art. The act of

manually entering the printer device information necessary to create a queue for a new printing device is radically different than the idea of providing a new and hitherto unique print queue management user interface which is used to specify a maximum number of print queues to allow on the print server during automatic printer detection and queue creation.

15. In addition, there is no reference in the cited AAPA regarding "entering policy rules that govern how print queues that govern how print queues are created and published, wherein the policy rules are entered by a system administrator." This phrase is not in 0006-0009, but in the claims (see amended claim 1, dated 10/16/2007). Thus, this phrase is entirely consistent with the concept of a system administrator entering a maximum number of printing devices to be supported using a print queue management user interface, because it originates in the description of the invention, and not in the AAPA.

16. Richter discloses the notion of a "print server link." While this terminology would seem unusual to a person of ordinary skill in the art, the body of the text of Richter is consistent with the idea that this "link" would be more properly referred to as an "application." In addition, Richter (claim 9) describes a "print server capable of receiving print jobs from the network and sending the print jobs to the output printing device, and capable of receiving at least one of the plurality of features from the output printing device and sending the received at least one of the plurality of features through the network connection to the client computer." These features are described in claims 4-8, and include device options such as paper input and output trays and "device service information," as well as status information regarding consumables, such as "toner level"

and "fuser level." In claim 10, Richter discloses an "administrative print server link located connected to the network, the administrative print server link capable of receiving and displaying the at least one of the plurality of features from the output printing device, and displaying the status information regarding each of the at least one print jobs sent to any of the output printing devices from each of the client computers."

17. Regardless of the use of some non-standard language, it would be clear to one of ordinary skill in the art that Richter defines an administrative application for monitoring the capabilities and status of printers and printer queues. This is a "one way" interface; the gist of Richter is that the Chooser application, used for selecting a printer, is insufficient for print job routing and tracking, and from that background, a person with ordinary skill would see value in Richter's enhanced status capability. Thus the need for a "link" which allows display of printer features, and a way of viewing the status of documents to be printed, at both the single user and administrative (all-user) level. However, a person of ordinary skill in the art would understand that this "link", or application, does not provide any means of print queue control, nor does it provide or imply any interface for controlling the print server operation itself, whereby a limitation on the creation of a new print queue could be implemented. As noted by the Examiner, Richter does not disclose wherein the system administrator designates a maximum number of devices to be supported. Thus, a person of ordinary skill would agree that Richter is unrelated to 09/892,525, in that (1) Richter discloses a user interface only for monitoring, without any concept or means of queue control, and this interface does not expose or imply the control of any properties about the print server itself, such as rules for queue creation, and (2) Richter does not specify a maximum number of printing devices to be supported.

To a person of ordinary skill in the art, the ideas presented by Richter simply would not disclose or fairly suggest "wherein the system administrator designates a maximum number of printing devices to be supported using a print queue management interface, and a print queue is not created for a printing device once an existing number of print queues has reached the designated maximum number."

18. Based on these arguments, I strongly believe that a person of ordinary skill in the art, at the time of the invention, would not have found obvious that White, AAPA, and Richter, either separately or in combination, disclose the concept of a system administrator designating a maximum number of printing devices to be supported using a print queue management interface, nor would this art disclose the idea of an automated print queue creation process being stopped because the number of existing print queues has already reached the designated maximum.

19. The USPTO states that "Bellucco discloses the number of queue is limited by the amount of available memory (RAM) available in the server (refer to Col 6, Lines 55-65), and each queue is associated with one or more printing device (refer to Col 4, Lines 55-61). Therefore, it is obvious that the system administrator would not create a print queue for a print device once an existing number of print queues has reached the designated maximum numbers. (amount of RAM/resources available is limited when supporting the number of print devices in the network, and the print queue would not be created since all the current printing devices have allocated all the resources/RAM/IP addresses.)."

20. Respectfully, a person of ordinary skill would disagree with the above statement for a number of reasons. First, the concept of IP addresses as a limited resource

at the time of this art is invalid (see above DHCP discussion, paragraphs 6 to 11).

Secondly, RAM as a limited resource at the time of this art was also an obsolete idea, given that all modern server operating systems allow for the concept of virtual memory. Lastly, it should be clear to the USPTO that Bellucco defines a queue differently than the remainder of the art described in the rejection, and as such it may be unsound to compare system limitations as described by Bellucco with system limitations disclosed elsewhere.

21. As mentioned above, RAM is generally not a limited resource, and was not at the time of this art. Virtual memory, whereby portions of mass storage are used to temporarily store the contents of blocks or pages of physical memory (RAM) while that memory is used for secondary functionality, is a concept common to all modern operating systems. As necessary, these blocks or pages of memory are exchanged, or swapped with the content of physical RAM, thereby acting as additional memory space by allowing the faster physical RAM to be reused for another purpose. Thus, a typical server is not limited by the amount of physical RAM, but is instead limited by the (typically much larger) amount of mass storage available for virtual memory space or swap storage. A person of ordinary skill in the art would most likely consider available physical RAM to be of no consequence when creating print queues, given that the quantity of RAM would not, in reality, limit the ability to create a queue. Thus, one of ordinary skill in the art would recognize that there is no practical limit imposed by RAM on a number of print queues that can be created, just as there is no practical limit imposed by IP addresses on a number of print queues that can be created.

22. If, for the sake of argument, a person of ordinary skill were to consider the case of a resource constrained server, wherein creating a print queue would fail due to

running out of RAM, or IP addresses, or some other system resource, the person of ordinary skill would still, I believe, consider this case to be different than the case in which a system administrator had, *a priori*, specified a maximum number of printer devices to be supported, using a print queue management user interface. In the former case, the system has failed, and would not function properly from that point in time onward without reconfiguration. In the latter, the person of ordinary skill in the art would understand that the system operation has been failure-proofed by the foresight of a system administrator who has imposed a limitation on the maximum number of print queues, by designating a maximum number of printing devices to be supported using a print queue management user interface. Thus, one of ordinary skill in the art would recognize that a hardware limitation on a number of print queues, such as the USPTO's asserted limitation based on RAM or IP addresses, is quite different from a system administrator designating a maximum number of printing devices to be supported using a print queue management user interface, wherein a print queue is not created for a printing device once an existing number of print queues has reached the designated maximum number.

23. A person of ordinary skill in the art would recognize that the print queues described by the network document processing system of Bellucco are not the same as the ones described in White, Richter, the AAPA, or 09/892,525. In Bellucco, "Each of the queues is mapped to one of configuration files or profiles (e.g. print profiles)," in column 4, lines 50-51, and "each of the print queues is associated with one or more of the document processing units or printers," column 4, 57-58. Thus, an ordinarily skilled reader would understand that a queue, according to Bellucco, is not associated with a single printing device, but a number of printing devices which can provide output using the same

configuration. So, regardless of the number of printing devices, there may be one queue for black and white, single sided printing, a second queue for black and white duplex printing, a third for color simplex printing, and a fourth for color duplex printing. In fact, these four queues would be present in a system that functions as described by Bellucco even if only a single printer were available, and that printer could do color or black and white, simplex or duplex printing.

24. Likewise, a person of ordinary skill in the art would understand that if one more independent feature were included (e.g., stapling), there would be not one more, but four more queues created - each similar to the ones listed in the previous paragraph, but with the single additional feature enabled. In fact, for any number 'N' of independent features, Bellucco would generate 2^N queues, or printer profiles. Therefore, the addition of a new printer which has no previously identified printer properties would not generate any new queues. But, the addition of a single new device with a single previously unidentified property (feature) would double the amount of queues required on the server. Such a property could even consist of something as simple as a higher printing speed (see example, column 5, lines 13-34, where a job requiring a 'high volume' printing system is routed to a second queue). Thus, the number of queues in Bellucco's invention scales exponentially in proportion to the number of features available, and is not at all directly related to the number of printing devices to be supported. Due to this difference in the concept of a printing queue, the system disclosed by Bellucco would appear to be very different and incompatible, to a person of ordinary skill, than the system disclosed by White, Richter, the AAPA, and 09/892,525. In these latter cases, the addition of a new printing device generally necessitates the addition of a single new queue associated with a

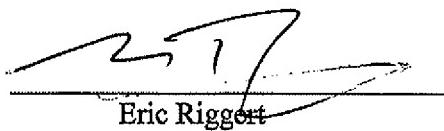
required printer driver, and the maximum number of such queues is generally not taken into consideration. A person of ordinary skill in the art would never combine Bellucco and White to come to the conclusion that together, they disclose a system administrator designating a maximum number of printing devices to be supported, nor would they conclude that such a combination discloses a print queue not being created for a printing device once an existing number of print queues has already reached the number designated by the system administrator.

25. Returning to White, the USPTO indicates that "White teaches accessing policy rules for the print queues (users are able to config proper parameters (accessing policy rules)), and publishing the printer queue to the network according to said policy rules (so that the printer can be utilized for the network due to the configuration)." In 0002-0005, it would be clear to a person of ordinary skill in the art that White does disclose a requirement for various configuration steps to be performed on both the client computer (0003) and the print server (0004), as well as the "network operating system" (0005). For the client and server, White specifies the typical use of a "vendor configuration application", while the network operating system must be made to execute, "its configuration routines." White decries the lack of integration of these applications and routines as described. A person of ordinary skill in the art would understand that the goal of White's invention is to integrate these vendor proprietary, and network operating system particular configuration steps, and would not see in these statements a disclosure that "the system administrator designates a maximum number of printing devices to be supported using a print queue management interface," or that "a print queue is not created for a

printing device once an existing number of print queues has reached the designated maximum number."

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Subscribed this 10th day of June, 2008.



Eric Riggert

FCHS_WS 2197643v1